

What Is Claimed Is:

1. A method of optimizing a network configuration, the network including a plurality of switching nodes and a plurality of intermediate transport nodes, each of the plurality of intermediate transport nodes being assigned to one of the plurality of switching nodes, a location of at least one of the plurality of switching nodes being fixed, the method comprising:

reassigning the plurality of intermediate transport nodes to a nearest switching node;

modifying locations of those of the plurality of switching nodes that are not fixed; and

repeating the steps of reassigning and modifying such that a sum of distances between the plurality of intermediate transport nodes and the respective switching nodes to which each of the intermediate transport nodes are assigned is minimized and no further reassignments of the plurality of intermediate transport nodes take place.

2. The method of claim 1, further comprising:

during modification of the locations of the plurality of central switching nodes, centering each of those of the plurality of switching nodes that are not fixed among a plurality of intermediate transport nodes assigned to the respective switching node.

3. A method of optimizing a network including switching nodes and base stations, comprising the steps of:

- a) obtaining an initial network configuration of n switching nodes and a plurality of base stations, a number m of the n central nodes being movable;
- b) calculating a distance from each base station to each switching node;
- c) determining a nearest switching node to each base station;
- d) assigning each base station to the corresponding nearest switching

node;

e) centering each of the m moveable switching nodes among the base stations assigned to the respective switching node; and

f) repeating steps b) through e) until none of the base stations are reassigned from one switching node to another during assignment.

4. The method of claim 3, further comprising the steps of:

before calculation of distances, determining coordinates of each of the switching nodes and base stations in the network; and

during centering, for each movable switching node, determining a central location by calculating an average latitude and average longitude for the base stations assigned to the switching node.

5. The method of claim 3, wherein the distances are great circle distances along the earth's surface.

6. The method of claim 3, wherein the network is a fixed wireless telecommunications network.

7. An article comprising a computer-readable medium which stores computer-executable instructions for causing a computer system coupled to a system memory to:

a) obtain an initial network configuration of n switching nodes and a plurality of base stations, a number m of the n central nodes being movable;

b) calculate a distance from each base station to each switching node;

c) determine a nearest switching node to each base station;

d) assign each base station to the corresponding nearest switching node;

e) center each of the m moveable switching nodes among the base stations assigned to the respective switching node; and

f) repeat steps b) through e) until none of the base stations are reassigned from one switching node to another during assignment.

8. The article of claim 7, further causing a computer system to:

before calculation of distances, determine coordinates of each of the switching nodes and base stations in the network; and

during centering, for each movable switching node, determine a central location by calculating an average latitude and average longitude for the base stations assigned to the switching node.

9. The article of claim 7, wherein the distances are great circle distances along the earth's surface.

10. A network comprising:

at least one fixed central node located in at least one fixed location;

at least one moveable central node; and

a plurality of intermediate transport nodes, each end node initially coupled and assigned to one of:

a) one of the at least one fixed central nodes; and

b) one of the at least one moveable central nodes;

wherein the network is optimized by iteratively recoupling and reassigning each of the plurality of intermediate transport nodes to a nearest central node and relocating the movable central nodes to a central location among respectively assigned intermediate transport nodes.

11. The network of claim 10, wherein the network arrangement is configured such that a sum of distances between the plurality of intermediate transport nodes and the respective central nodes to which each of the intermediate transport nodes are assigned is minimized.

12. The network of claim 11, wherein the distances are great circle distances along the earth's surface.

13. A method of optimizing a network configuration, the network including a plurality of switching nodes and a plurality of base stations, each of the plurality of base stations being assigned to one of the plurality of switching nodes, a location of at least one of the plurality of switching nodes being fixed, the method comprising:

reassigning each one of the plurality of base stations to a switching node with which a communication cost factor is minimized;

modifying locations of those of the plurality of switching nodes that are not fixed; and

repeating the steps of reassigning and modifying such that the cost factor for communications between the plurality of base stations and the respective switching nodes to which each of the base stations are assigned is minimized and no further reassignments of the plurality of base stations take place.

14. The method of claim 13, wherein minimizing the cost factor of communications includes the step of minimizing a sum of distances between the plurality of base stations and the respective switching nodes to which each of the base stations are assigned.